REMARKS/ARGUMENTS

In response to the final rejection, claims 5, 7 and 9 have been amended and the following arguments presented. Claims 5-10 and 33-34 are present.

Claims 5-10, 33, 34, and 40-42 were rejected under 35 USC 112, second paragraph as being unclear as to the meaning of "infecting a plant by itself without another virus". Claims 5, 7, and 9 have been amended as suggested by the examiner. Therefore, this rejection should be withdrawn.

Claims 5-10, 33, 34 and 40-42 were rejected under 35 USC 112, first paragraph as not having an adequate written description.

The examiner contends that the specification lacks adequate teaching of the various components of recombinant RNA plant virus expression systems other than the ones recited in SEQ ID NO: 1-3. This rejection is respectfully traversed.

A patent application is directed to those skilled in the art. This area of technology is well developed by numerous publications. Particularly note U.S. Patents 5977438, 5866785 and 5846795. There is no need to recite the basic components and features for standard molecular biology. For example, a large number of different promoters are known per se. Their composition and use in the disclosed expression systems are readily apparent. Specific sizes may not be given but different promoters have different length and therefore listing a specific size would be meaningless. Likewise for other configurations of the recombinant virus. The specification has cited a number of publications and U.S. Patents disclosing examples of recombinant RNA plant virus expression systems. Likewise, several lysozyme genes are known and published. See pages 4-7 of the specification. All of these publications are incorporated by reference and are themselves full descriptions should one be interested. Accordingly, a considerable number of possible variations on the various components are taught and are readily apparent to those skilled in the art. Therefore, the rejection should be withdrawn.

Claims 5-10, 33, 34 and 40-42 were rejected under 35 USC 112, first paragraph as being enabled only for the particular construct made and not for the broad scope of the present claims.

The examiner is essentially stating that only experimentally made viruses are enabled. This is neither patent practice nor reasonable to those skilled in the art. These viral genomes can vary in size by many thousand base pairs and still be packaged inside the virus particle. Likewise, because of the simplicity of the virus's lifecycle, a considerable number of changes may be made. Note the body of published literature wherein a variety of viruses, promoters, etc. have been used to produce plant expression vectors.

The examiner has correctly pointed out that not all genes are properly expressed in plants to produce a protein. However, this does not detract from the flexibility and usefulness of the other components of a plant RNA viral vector system. With the unpredictability at the point of the particular heterologous gene being expressed to produce a protein not ordinarily made in a plant cell, the claims should, and are, restricted to the particular heterologous gene/protein, namely lysozyme. The present claims are so limited and therefore the rejection should be withdrawn.

Claims 5-10, 33, 34 and 40-42 were rejected under 35 USC 103(a) as being obvious over Mirkov et al in view of Donson et al for reasons given previously.

The examiner considers Mirkov et al to teach producing bovine lysozyme in plants. However, what Mirkov et al actually show are two separate experiments, 1) production of active lysozyme in yeast and 2) an attempt to produce bovine lysozyme in plants by a different approach. There is no showing of successful production of enzymatically active lysozyme in plants.

The lysozyme shown to be enzymatically active was produced in yeast, not plants (Example 1). This product is stable and useful for treating plants to make them less susceptible to infection (Examples 2 and 3). However, the plant cells themselves did not produce this lysozyme.

The transgenic tobacco plants produced a protein that is about the same size as lysozyme and which antigenicly cross-reacts with antisera against lysozyme, but no enzymatic activity was shown. (Example 4). Plants frequently denature heterologous recombinant proteins. If so, the protein would have the same size and probably some

antigenic cross-reactivity by antisera. However, denatured lysozyme would lack enzymatic activity. The examiner considers a protein cross-reacting with antibody to be a "biologically active". While not the best definition of "biologically active", binding to antibody does not establish enzymatic activity.

Applicants have amended their claims to recite "enzymatically active". Applicants repeat the numerous arguments presented in previous responses except for arguing that the invention produced "enzymatically active" lysozyme instead of "biologically active" lysozyme. The point remains the same that Mirkov et al did not show producing it and the unpredictability of expression in plant systems makes it merely "obvious to try" but not necessarily obvious to succeed. Therefore, the rejection should be withdrawn.

If needed, applicants petition for an extension of time under the provisions of 37 CFR 1.136(a) for sufficient time to accept this response. The commissioner hereby is authorized to charge payment of any fees under 37 CFR § 1.17, which may become due in connection with the instant application or credit any overpayment to Deposit Account No. 500933.

Respectfully submitted,

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Enclosure: Petition for a One-Month Extension of Time

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